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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/558,377 | 04/26/2000 | Jean-Francois Autechaud | T2147-906398 | 9531 |

7590 09/16/2003
Edward J Kondracki
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EXAMINER

HO, THANG H

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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2188

DATE MAILED: 09/16/2003

6

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/558,377

Applicant(s)

AUTECHAUD, JEAN-FRANCOIS

Examiner

Thang H Ho

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 April 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 13-48 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

Priority

1. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been received on 04/26/2000.

Information Disclosure Statement

2. The information disclosure statement (IDS) filed on 04/26/2000 has been received and considered. Please see attached PTO-1449.

Specification

3. Claims 1-12 have been cancelled per applicant's request.
4. Claims 13-48 are presented for examination.

Claim Objections

5. Claims 27 and 28 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claims 27 and 28 cite the limitation "...characterized in that it consists of disconnecting one of the first-level multiprocessor modules (QPi) from its connection agent (NCSi) to free said connecting agent and of connecting, via this freed connection agent, a second given number of processors organized into a second given number of multiprocessor modules, also capable of being inserted into said interconnection architecture comprising a modular interconnection architecture". However, the independent claim 24 already specifies the above limitation. Thus, claims 27 and 28 are not further limiting.

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6. Claims 23, 31, 37 and 42 are objected to because of the following informalities:

As per claim 23, on line 18, the recitation of "the processors, . characterized" should be changed to read --the processors, characterized--.

As per claim 31, on line 1, the recitation of "multi node" should be changed to read --multinode--.

As per claim 37, on line 15, the recitation of "to mplement" should be changed to read --to implement--.

As per claim 42, on line 1, the recitation of "in claim 13" should be changed to read --in claim 37--.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

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8. Claim 13 is rejected under 35 U.S.C. 102(e) as being anticipated by Hagersten et al. (USPN: 5,983,326), hereinafter Hagersten.

As per claims 13 and 31, Hagersten discloses in figures 1-3 a modular interconnection architecture for an expandable multiprocessor machine (10) comprising a given number of multiprocessor modules, each module including a plurality of processors (16) and associated cache memories (22) organized into nodes (12) and distributed on at least two interconnection levels via system interface (24): a first interconnection level corresponding to interconnection of the multiprocessor modules within a node, and a second interconnection level corresponding to the interconnection of the nodes with one another, the first interconnection level comprising connection agents (102) connecting the multiprocessor modules to one another and handling the transactions between the multiprocessor modules, the second interconnection level (24) comprising external connection nodes connecting the nodes to one another and handling the transactions between the nodes, the connection agents and the external connection nodes respectively having the same basic structure, the same external interface, and adapted to implement the same coherency control protocol for the cache memories of the processors (e.g. Abstract, column 7, lines 9 et seq.).

As per claims 14 and 32, Hagersten further discloses in figures 1 and 3 that each external connection node (12) comprises two identical connection agents (24) connected head-to-tail for receiving and filtering transactions between nodes.

As per claims 15-16 and 33-34, Hagersten discloses that each connection agent (24) comprises an associative memory with a fixed size determined as a function of the

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number of processors in the multiprocessor module to which the connection agent (24) is connected, the state of the memories being indicative of the presence of the last modified data blocks in the cache memories of the multiprocessor module (e.g. FIG. 2, column 13, lines 27-59).

As per claims 17 and 35, Hagersten discloses that the first and second head-to-tail connection agents (24) only accept transactions for blocks modified in their respective associative memories; modified data blocks in the first connection agent being exported to the requesting multiprocessor module or modules and, conversely, modified data blocks in the second connection agent being imported from the module or modules holding the blocks (e.g. column 16, lines 1 et seq.).

As per claims 18-22 and 36, the transactions between external nodes require two identical connection agents (24) connected head-to-tail for receiving and filtering transactions between nodes. Therefore, the second interconnection level has a latency that is double the latency of the first interconnection level.

As per claims 23-30 and 37-48, the claims encompass the same scope of invention as to that of claims 13-18, however the claims are drafted as method format rather than apparatus format, the claims are therefore rejected for the same reasons as being set forth above.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See Form PTO-892.

10. Any response to this action should be mailed to:

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Commissioner of Patents and Trademarks

Washington, D.C. 20231

Or faxed to:

After-final (703) 746-7238

Official (703) 746-7239

Non-Official/Draft (703) 746-7240

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA. Sixth Floor (Receptionist).

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thang H Ho whose telephone number is 703-305-1888. The examiner can normally be reached on Monday-Friday from 7:00 A.M. - 4:30 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mano Padmanabhan can be reached on 703-306-2903. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-6606 for regular communications and 703-308-9051 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-9600.

TH
September 5, 2003

Kevin L. Ellis
Primary Examiner

Kevin L. Ellis